Remarks:

Claims 1-3, 5, 8-13, 15, 18, 22, 23, 25, 28-32, and 34-40 remain in this application. Claims 4, 6, 7, 14, 16, 17, 19-21, 24, 26, 27, and 33 have been cancelled. Claims 41-49 were previously withdrawn from consideration. Claims 1, 12, 22, and 31 have been amended by adding "wherein the soy protein material has a protein content of from about 65.0 weight percent up to 90 weight percent on a moisture free basis and wherein the soy protein material is separated from an aqueous slurry of an alcohol washed soy protein concentrate." Support for these amendments can be found in the specification at page 2, paragraph 18, lines 1-4, " "soy protein concentrate" refers to soy protein containing material that contains from 65% up to 90% soy protein by weight on a moisture free basis", and at page 7, paragraph 67, lines 4-5 "has a protein content of from 65% to 90% by weight on a moisture free basis" and at page 5, paragraph 42, line 3-4 "the alcohol washed soy protein concentrate is slurried with water."

Double-Patenting

Claims 1-37 and 39 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. 11/240212. Submitted herewith is a terminal disclaimer in compliance with 37 CFR 1.321(c). Reconsideration and withdrawal of this ground of rejection is respectfully requested.

Rejection Under 35 §USC 102(b)

Claims 1-4, 6-14, 16-24 and 26-37 were rejected under 35 USC § 102(b) as being anticipated by US 3,607,860 (the '860 patent) invented by Yamato et al. As previously noted claims 4, 6, 7, 14, 16, 17, 19-21, 24, 26, and 27 have been cancelled. Independent claims 1, 12, 22, and 31 have been amended as noted above. Applicant believes the claims as currently amended are not anticipated by the '860 patent for the following reasons and are in proper form for allowance.

The '860 patent teaches preparing a soy protein isolate by the following steps:

- Preparing soy milk by extracting protein from soybeans or soybean meal with water at a pH above 6 (col. 1, lines 70-23 col. 2, line 1).
- Acidifying the soymilk to precipitate and separate the protein in a curd state; pH of this step is from 3.5 to 5.0 (col. 2, lines 11-14).
- Alkalizing treatment of the precipitated and separated protein at a pH from 9 to 12 (col. 2, lines 27-31) to "obtain a water-binding property and a gel-forming ability" (col. 2, lines 39-40). This step is required. If the alkalizing treatment is not done and the separated protein "is immediately neutralized and dried and no alkalization step is carried out, the protein may have an insufficient water-binding property and, … a product with weak gel strength and inferior visco-elasticity may be obtained" (col. 2, lines 59-66).
- Neutralizing the protein after the required alkalization step to a pH from 5 to 8, preferably between 6 and 7 (col. 2, lines 45, 52-53).
- Heating at a temperature of from 60ºC to 150ºC (col. 3, lines 37-38).
- Drying the protein powder (col. 5, lines 17) to produce a soy protein isolate (col. 5, lines 21-22 where 90.5 % protein on a moisture free basis is calculated from the analysis of the product: 86.3% crude protein and 4.68% water content; also col. 6, lines 1, 2 where 90.3% protein on a moisture free basis is calculated from the analysis of the product: 86.45% crude protein and 4.25% water content).

The '860 patent teaches that a soy protein product prepared without an alkalizing step may have weak gel strength. Therefore, the '860 patent teaches away from a soy protein material made by a process that does not include an alkalizing step and yet has high gel strength. As noted above, the '860 patent process requires an alkalizing step (col. 2, lines 60-66) so that the soy protein isolate "As a result…obtains a water-binding property and a gel-forming ability" (col. 2, lines 39-40). Thus, the '860 patent which teaches a process to make a soy protein isolate requiring an alkalizing step in order to have good gelling characteristics does not teach, suggest or make obvious a process to make a

soy protein concentrate with high gel strength, which does not include an alkalizing step.

The current application discloses a soy protein material having a protein content of from about 65 weight percent up to 90 weight percent on a moisture free basis. The starting material for the current application is an alcohol washed soy protein concentrate (page 8, paragraph 41). The current application is drawn to preparing a soy protein concentrate with high gel strength and high emulsification characteristics by the steps of:

- Acidifying the alcohol washed concentrate to between 4.3 and 5.3 pH (page 5, paragraph 44, lines 5-6) to precipitate and separate the soy protein from the soluble components (page 5, paragraph 47, lines 3-6).
- Neutralizing the soy protein concentrate by adjusting the pH to from 7.0 to 7.5 (page 6, paragraph 50, lines 4-5).
- Treating the neutralized soy protein concentrate to a heat treatment at a temperature of from 135ºC to 180ºC (page 6, paragraph 52, lines 17-18).
- Thereby forming a soy protein material having high gel strength.

As previously stated, the current application is drawn to a soy protein material having a protein content of about 65 weight percent up to 90 weight percent on a moisture free basis, said soy protein material is a soy protein concentrate not a soy protein isolate. The process for making the soy protein material yields a soy protein material having high gel strength without requiring an alkalizing step. Thus, the process of the ‘860 patent which requires an alkalizing step to obtain a soy protein isolate having good gel strength does not teach, suggest or make obvious the process for making a soy protein concentrate having high gel strength which does not require an alkalizing step as claimed in the amended claims of the current application. In fact, the ‘860 patent teaches directly away from the amended claims of the current application which do not include an alkalizing step yet still makes a high gel strength soy protein concentrate.

Claims 1-37 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 7,081,257 (the '257 patent) invented by Monagle et al. As previously noted claims 4, 6, 7, 14, 16, 17, 19-21, 24, 26, 27, and 33 have been cancelled. Independent claims 1, 12, 22, and 31 have been amended as previously noted. Applicant believes the claims as currently amended are not anticipated by the '257 patent for the following reasons and are in proper form for allowance.

The '257 patent teaches "a process to obtain a highly soluble…vegetable protein product" using soy flakes as a starting material (Abstract). The soy protein material of the '257 patent is prepared by the following steps:

- Dispersing soy flakes in water at around neutral pH (7.0-7.5) (col. 4, lines 36-38).
- Extracting the dispersion (col. 4, line 38-39).
- Separating the dispersion to remove and discard the insoluble fraction and retain the soluble supernatant fraction (col. 4, lines 39-42).
- Neutralizing the soluble supernatant (col. 3, line 35).
- Heating the soluble supernatant (col. 4, line 44) to obtain a soy protein product from the soluble supernatant of the soy flakes.
- Drying the soy protein product derived from the soluble supernatant (col. 4, lines 45-46).

The '257 patent teaches the use of soy flakes as the starting material (col. 3, lines 50-51). The '257 patent further teaches producing the soy protein product from the soluble fraction of the soy flakes while discarding the insoluble fraction of the soy flakes. Thus, the '257 patent does not teach, suggest or make obvious a process which uses an insoluble fraction of a soy protein concentrate to obtain a soy protein material having a high gel strength.

In contrast, the amended claims of the current application use the insoluble fraction of an alcohol washed soy protein concentrate to form a soy protein material having high gel strength. The application as currently amended requires the following steps to make a soy protein material having high gel strength from the insoluble fraction of an alcohol washed soy protein concentrate:

- Acidifying the pH of the alcohol washed soy protein concentrate to between 4.3 and 5.3 (page 5, paragraph 44, lines 5-6) to precipitate and separate the insoluble fraction (the soy protein) from the soluble components. Retaining the insoluble fraction (page 5, paragraph 47, lines 3-6). This step "is particularly important to produce the high lard gel strength, high emulsification strength soy protein material of the present invention" (page 5, paragraph 45, lines 5-7).
- Neutralizing the insoluble fraction by adjusting the pH to from 7.0 to 7.5 (page 6, paragraph 50, lines 4-5).
- Treating the neutralized insoluble fraction to a heat treatment at a temperature of from 135ºC to 180ºC (page 6, paragraph 52, lines 17-18).
- Thereby forming a soy protein material having high gel strength from the insoluble fraction of an alcohol washed soy protein concentrate.

Thus, the '257 patent which teaches a process that uses the soluble fraction from soy flakes to make a highly soluble soy protein product does not teach, suggest or make obvious a soy protein material having high gel strength made from the insoluble fraction of an alcohol washed soy protein concentrate.

Rejection Under 35 U.S.C §103(a)

Claims 1-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over the '860 patent by Yamato et al or the '257 patent by Monagle et al.

As discussed above, the '860 patent process includes an alkalizing step that must be performed prior to the heat step to avoid obtaining a soy protein isolate "with weak gel strength and inferior visco-elasticity" (col. 2, lines 65-66). "The successive steps of acidification, alkalization (to pH 9-12), approximate neutralization including weak acidity and weak alkalinity, are extremely important characteristics of the present invention" (col. 2, lines 67-70). The '860 patent further discloses (col. 3, lines 52-55) "The effect of the present invention is achieved only in the case that a series of operations as described above is accompanied by the heating step." The teachings of the '860 patent which require an alkalizing step in order to form a soy protein isolate having good gel

strength directly teach away from the process of the current application which obtains high gel strength without the use of an alkalizing step. One skilled in the art trying to make a soy protein material having high gel strength but not wanting to use an alkalizing step would not have considered the use of the process taught by the '860 patent which teaches the alkalizing step is required in order to obtain high gel strength. Because the '860 patent requires an alkalizing step, it would not have been obvious to one of ordinary skill in the art who wished to obtain a soy protein material having high gel strength, to manipulate the process of the '860 patent by deleting the step that the '860 patent clearly states is required to obtain the high gel strength (col. 4, lines 25-32, 46). Thus the '860 patent does not teach, suggest, or make obvious the process or composition claimed in the amended claims of the current application.

As previously discussed, the '257 patent teaches preparing a soy protein material "which is highly soluble in water and forms a gel with mid heat treatment" (col. 3, lines 17-19). Soy protein is the preferred protein (col. 2, lines 36-37). Soy flakes are dispersed in water at a pH between about 6.8 and about 8.5 and the soluble proteins are extracted from the flakes to form a soy material (Claim 1, col. 9, lines 44-50); the insoluble fraction is removed (col. 4, line 40) and discarded (col. 5, line 49) to provide a liquor (col. 9, line 51); the liquor is heat treated, cooled, and to yield the soy protein product of the '257 patent (col. 9, lines 53-57).

Thus, the key to the '257 invention is a process where the protein is solubilized and separated in the soluble fraction (see Claim 1).

In contrast, the amended claims of the current application teach a method of making a soy protein concentrate by forming a slurry of alcohol washed soy protein concentrate with water (page 5, paragraph 43, lines 1-2), the pH is then adjusted to between 4.3 and 5.3 (page 5, paragraph 44, lines 5-6) "in order to solubilize the minerals in the slurry while minimizing protein solubility to facilitate removal of minerals and other solubles in a subsequent separation process" (page 5, paragraph 44, lines 1-4). "After pH adjustment, the slurry is subjected to a separation process to remove soluble components" (page 5, paragraph 45,

lines 1-2) “while retaining proteins in the slurry” page 5, paragraph 40, line 9). The supernatant (solubles) is discarded (page 8, paragraph 78, lines 15-16). “The solubles separation step is particularly important to produce the high lard gel strength, high emulsification strength soy protein material of the present invention” (page 5, paragraph 45, lines 5-7). The slurry is subjected to a centrifugal separation process. The soluble components are removed in the liquor fraction, while insoluble materials such as the soy protein are retained in the “insoluble cake” (page 5, paragraph 47, lines 1-6). The insoluble centrifuge cake is diluted with water to make a slurry (page 5, paragraph 49, line 9; page 6 paragraph 49, line 2). After removing the solubles, the pH is adjusted to from 7.0 to 7.5 (page 6, paragraph 50, lines 1-5). The neutral slurry is heat treated (page 6, paragraph 51, lines 1-3) to produce the soy protein concentrate composition of the current application. After heating, the soy protein concentrate is cooled (page 6, paragraph 57, lines 1-3) and then dried to produce the powdered soy protein concentrate composition of the present invention (page 6, paragraph 59, lines 1-3).

The current application claims a process where the protein is kept insoluble and separated in the insoluble fraction (page 5, paragraph 44, lines 1-4; page 5, paragraph 47, lines 1-6). It is then neutralized, heated, cooled and dried (page 6, paragraph 57, lines 1-3; page 6, paragraph 59, lines 1-3).

The ‘257 patent which solubilizes and separates the protein in the soluble fraction teaches away from the current application which minimizes the solubility of the protein and separates and removes the solubles from the insoluble soy protein. Thus one skilled in the art, who wanted to make a soy protein material from an insoluble soy protein fraction would not look to the ‘257 patent which teaches how to make a soy protein product from the soluble soy protein fraction. The ‘257 patent does not teach, suggest or make obvious the amended claims of the current application.

Based on the foregoing reasons, Applicant believes amended claims 1-37 are not made obvious by either the ‘860 patent or the ‘257 patent and should therefore be allowed.

Claim 39 is rejected under 35 U.S.C. §103(a) as being unpatentable over the ‘860 patent or the ‘257 patent taken together with either one of US 6,355,296 (the ‘296 patent) invented by Altemueller et al or US Publication No. 20030021880 (the ‘880 publication) invented by Egbert et al. Since neither the ‘860 patent nor the ‘257 patent teach, suggest or make obvious the soy protein material of the current application, combining either of them with the ‘296 patent or the ‘880 publication would not yield a dairy product containing the soy protein material of the current application.

Combining the isolated soy protein taught by the ‘860 patent with either the ‘296 patent or the ‘880 publication would yield a dairy product containing an isolated soy protein rather than the soy protein material of the current application which is a soy protein concentrate made from the insoluble fraction of soy flakes.

Combining the soy protein product taught by the ‘257 patent with either the ‘296 patent or the ‘880 publication would yield a dairy product containing a soy protein product made from the soluble fraction of the soy flakes rather than the soy protein material of the current application which is produced from the insoluble fraction of the soy flakes.

Claim 39 of the current application is not taught, suggested, or made obvious by a combination of either the ‘860 patent or the ‘257 patent with the ‘296 patent or the ‘880 publication. One skilled in the art would not have thought to combine any of these references to obtain a dairy product that contains a soy protein concentrate made from the insoluble fraction of soy flakes. Thus, Applicant believes claim 39 of the current application should be allowed.

For the foregoing reasons, it is submitted that the amended claims of the current application are in condition for allowance. The foregoing remarks are believed to be a full and complete response to the outstanding office action. Therefore the Applicant respectfully requests that the Examiner allow claims 1-3, 5, 8-13, 15, 18, 22, 23, 25, 28-32, and 34-40 as currently amended. If for any reason the Examiner believes a telephone conference would expedite the prosecution of the current application, it is respectfully requested that he call Applicant’s attorney at 314-659-3088.

If any additional fees are due in connection with the filing of this amendment, the Commissioner is authorized to charge those fees to our Deposit Account No. 50-0421.

Respectfully submitted,
SOLAE, LLC

Date: November 17, 2008 //Holly M. Amjad//
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